

AMENDMENT

In the claims:

Please amend claim 24 to read as follows:

24. (Amended) A method of introducing a nucleic acid encoding a desired molecule into cardiomyocytes which comprises:

infusing a recombinant adeno-associated virus (AAV) vector into a coronary artery or a coronary sinus for a time and in an amount sufficient to stably and efficiently transduce cardiomyocytes perfused [by] through said artery or said sinus, wherein said AAV vector comprises at least one nucleic acid operably linked to a control region, said nucleic acid encoding said desired molecule.

Summary of the Invention

The claimed invention, as currently and most broadly claimed (claim 24), is directed to:

A method of introducing a nucleic acid encoding a desired molecule into cardiomyocytes which comprises infusing a recombinant adeno-associated virus (AAV) vector into a coronary artery or a coronary sinus for a time and in an amount sufficient to stably and efficiently transduce cardiomyocytes perfused by said artery or said sinus, wherein said AAV vector comprises at least one nucleic acid operably linked to a control region, said nucleic acid encoding said desired molecule.

The method is based upon the discovery and demonstration that infusion of these AAV vectors into a coronary artery or coronary sinus can lead to transduction of cardiomyocytes.

Prior to the present invention, it had never been demonstrated that such vectors could cross from the coronary artery or coronary sinus into cardiomyocytes at levels sufficient to cause biologically meaningful transduction.

Although the invention may be used for many purposes which would be apparent to the skilled artisan (including but not limited to transducing explanted hearts, and gene therapy of